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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/678,110	10/02/2000	Louis B. Rosenberg	IMMR-070/01US	4151

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EXAMINER

NELSON, ALECIA DIANE

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/678,110

Applicant(s)

ROSENBERG ET AL.

Examiner

Alecia D. Nelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 1/24/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 15,17,18,36-48,75-91,98 and 100-102 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 88-102 is/are allowed.
- 6) ☐ Claim(s) 15,17,18,36,37,48,75-79,86 is/are rejected.
- 7) ☐ Claim(s) 38-47,80-85 and 87 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 18.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 2/11/03 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. **Claims 15, 17, 18, 48, and 75-77**, are rejected under 35 U.S.C. 103(a) as being unpatentable over Marcus et al. (U.S. Patent No. 5,643,087) in view of Autry et al. (U.S. Patent No. 5,724,106).

With reference to **claims 15, 18, 75, and 76**, Marcus et al. teaches an input device for an interactive computer simulation or game, which includes a structure moveable by a user to transmit input signals to a computer (see abstract). The input device (10) includes a digital force feedback apparatus for use as an input device with an interactive computer simulation or interactive video game (see column 1, lines 47-51). The input device (10) may be utilized in conjunction with interactive simulation system, which includes a computer unit programmed with simulation rules. By providing touch or force feedback, the system will cause the user to feel a variety of programmable resistance effects upon digital movement of the control device, including felling "stiffness" or softness". The input device (10) communicates with a programmable section (14), which processes signals and information from the computer (16) and generates inputs to moveable structure (12), and processes outputs from the moveable structure (12) and switches (15). A general-purpose digital computer (16) is programmed with simulation or game rules. The input device (10) is connected to the computer (16), providing information and control signals to the computer (16) to interact with stored simulation rules and receiving information and control signals from the computer (16). The moveable structure (12), of the input device (10), includes electric motors (30, 32) along with angular position sensors (34, 36) attached to respective shafts thereof. Sensor (34) responds to the angular orientation of capstan (38) and

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sensor (36) responds to the angular orientation of capstan (40) to generate signals for use by the programmable unit (14). A cable transmission mechanism (23) driven by the capstan (38) is adapted to rotate a shaft (21) about an axis (42), and capstan (40) is adapted to rotate the shaft (21) about an axis (44). The sensors (34, 36) provide an output proportional to angular orientation of the respective motor shafts (30, 32) (see column 3, line 27-column 4, line 21).

Marcus et al. fails to teach that the device comprises a rotatable member shaped approximately like a wheel or knob. However, it is taught by Marcus et al. that the moveable member (12) is operated by using one digit of the users hand, as like a wheel or knob would.

Siddiqui teaches a mouse device (12) which has a plastic housing with a rim or edge of a rotatable wheel button (22) protruding from the upper surface (16) through a space between the left and right mouse buttons (18, 20) (see column 2, lines 53-60). There is also taught the usage of a detent mechanism (40), in cooperation with detent spring (42), provides tactile and optionally aural feedback to a user, allowing precise control of the rotation of axle (30). With further reference to **claims 48 and 86**, Siddiqui teaches that the oblong recess in the right axle support allows the right end of the axle (30) to move downwardly when the wheel button is depressed, such that the axis of rotation of the wheel button (22) tilts slightly within the housing of the mouse. The left end of the axle is mounted to pivot slightly about the left axle support, thereby to facilitate the downward movement of the right end (see column 3, lines 30-36). The axle (30) can be rotated in the axle supports to provide a positioning signal, and can be

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depressed, pivoting slightly about its attachment point in the left axle support, to provide a button signal (see column 4, lines 50-59).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to combine the rotatable wheel of Siddiqui to a device with the functionality of that which is taught by Marcus et al. in order to provide a force feedback device for a game or such which is simple and provides increased economy in manufacture and reliability in performance.

With further reference to **claims 17 and 77**, neither Marcus et al. nor Siddiqui teaches the usage of wireless transmission, however wireless transmission in remote control device is well known in the art.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the device similar to that which is taught by Marcus et al. and Siddiqui in order to provide the user with a mouse controller which can function remotely, thereby providing a larger range of operation of the device.

4. **Claims 36, 37, 78, and 79** are rejected under 35 U.S.C. 103(a) as being unpatentable over Marcus et al. in view of Siddiqui as applied to **claims 15 and 75** above, and further in view of Autry et al. (U.S. Patent No. 5,724,106).

With reference to the claims Marcus et al. and Siddiqui teach all that is required as explained above with reference to **claims 15 and 75**, however fails to teach that the

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plurality of functions include controlling a volume for audio output, selecting a received broadcast station or channel from multiple stations or channels and scrolling through a list of selections.

Autry et al. teaches a remote control device (124) used in an entertainment system (110), which comprises a handheld size device with standard television controls and numeric keypad, and in one embodiment, VCR controls and a pointing device (see column 5, line 65-column 6, line 15).

Therefore, being that Marcus et al. teaches that the control device of his disclosed invention is capable of generating different tactile feels in response to the selection made by the user of the controlling device, it would thereby be obvious to one having ordinary skill in the art to allow the functions carried out by the remote controller, of Autry et al., to allow different tactile feels to be felt by the user in response to the selection made by the user. This thereby provides feedback to the user to confirm the selection made by the user to control the electronic device.

Allowable Subject Matter

5. ***Claims 88-102*** are allowed.
6. ***Claims 38-47, 80-85, and 87*** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 1/24/03 have been fully considered but they are not persuasive. With reference to independent claims 15 and 75, the applicant argues that the combination of Marcus and Siddiqui fail to teach or suggest a sensor for sensing displacement of the rotatable member to select one of a plurality of functions based on the sensed displacement of the rotatable member. However, it would be obvious, and almost inherent, that the combination of the references disclose, or suggest, the limitation. Specifically Marcus teaches an input device including feedback wherein a programmable unit processes signals and information from the computer to generate signals to apply forces to the movable structure. The forces are based on events occurring in the simulation and movements of and forces applied to the movable structure by the user. Siddiqui teaches a computer-pointing device including a z-encoder mechanism, wherein positioning signals may be used in any desired fashion, such as for controlling cursor movement, or for adjusting other attributes of objects or data displayed on a computer screen. The depression of the wheel button may also be sensed by the encoder mechanism to provide a button signal, which may also be used in any desired fashion, such as to control or vary the user of the third positioning signal. Through these teachings it would be obvious to one having ordinary skill in the art that the device of Siddiqui alone has the ability to sense rotation of the z-encoder in order to select a function. As disclosed by Siddiqui, when the wheel button is depressed it may be used a button signal, which is known in the art to be used for "selecting" functions displayed on the display screen. Moreover, the usage of the device of Siddiqui provides

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the user with a simple method for navigating through documents and other information displayed. When using the wheel button the user has the ability to rotate the wheel in order to scroll as well as the ability to depress the wheel in order to make a selection within the information being viewed by the user. Therefore it is believed by the examiner that the combination of Marcus and Siddiqui clearly teaches a sensor for sensing displacement of the rotatable member to select one of a plurality of functions based on the sensed displacement of the rotatable member.

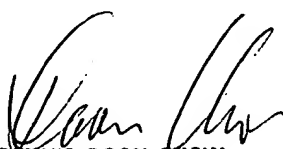
Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703)305-0143. The examiner can normally be reached on Monday-Friday 9:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras can be reached on (703)305-9720. The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9314 for regular communications and (703)872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-9700.

adn/ADN
June 30, 2003


DENNIS-DOON CHOW
PRIMARY EXAMINER